



Huawei AirEngine 5562-10-V2 Access Point Datasheet

Product Overview

Huawei AirEngine 5562-10-V2 is a Wi-Fi 6 (802.11ax) indoor access point (AP). It can simultaneously provide services on 2.4 GHz (2x2 MIMO) and 5 GHz (2x2 MIMO) frequency bands, achieving a device rate of up to 2.975 Gbps. This AP features high bandwidth and high concurrency with compact size, facilitating flexible deployment and saving customers' investment. These strengths make the APs apply to indoor scenarios such as SOHO enterprise offices, small- and medium-sized hospitals, commercial real estate, economic chain hotels, and schools.



AirEngine 5562-10-V2

- Provides services simultaneously on both the 2.4 GHz and 5 GHz bands, at a rate of up to 575 Mbps at 2.4 GHz (2x2), 2.4 Gbps at 5 GHz (2x2), and 2.975 Gbps for the device.
- 1 x GE electrical port.
- Built-in smart antennas to provide precise coverage for STAs, reduce interference, and improve signal quality.
- Supports the Fit, Fat, and Cloud three working modes.

Feature Descriptions

Wi-Fi 6 (802.11ax) Standard

- As the latest generation Wi-Fi standards of IEEE 802.11, 802.11ax improves user experience in high-density access scenarios and supports 2.4 GHz and 5 GHz frequency bands.
- MU-MIMO on both the 2.4 GHz and 5 GHz frequency bands, allowing an AP to transmit data to and receive data from multiple STAs simultaneously and multiplying the utilization of radio spectrum resources.
- 1024-QAM (quadrature amplitude modulation), improving data transmission efficiency by 25% compared with 802.11ac (256-QAM).
- OFDMA scheduling enables multiple users to receive and send information at the same time, reducing latency and improving network efficiency.
- Spatial reuse (SR) technology uses basic service set (BSS) coloring to enable APs and STAs to distinguish BSSs, minimizing co-channel interference.
- The target wake time (TWT) allows APs and STAs to negotiate the sleep and wake time with each other, thereby improving the battery life of the STAs.

MU-MIMO

The AP supports MU-MIMO and supports a maximum of four spatial streams, two spatial streams at 2.4 GHz (2x2 MIMO) and two spatial streams at 5 GHz (2x2 MIMO). The MU-MIMO technology enables an AP to send data to multiple STAs simultaneously, which doubles the radio spectrum resource usage, increases the number of access users and bandwidth, and improves user experience in high-density access scenarios.

High-speed Access

The AP supports 160 MHz frequency bandwidth, which increases the number of available data subcarriers and expands transmission channels. In addition, the AP uses 1024-QAM (quadrature amplitude modulation) and MU-MIMO to achieve a rate of up to 0.575 Gbps at 2.4 GHz radio, 2.4 Gbps at 5 GHz radio, and 2.975 Gbps for the device.

High Density Boost Technology

In high-density scenarios, Huawei uses the following technologies to address challenges such as terminal access problems, data congestion, and poor roaming performance.

SmartRadio for Air Interface Optimization

- Load balancing during smart roaming: The load balancing algorithm can work during smart roaming for load balancing detection among APs on the network after STA roaming to adjust the STA load on each AP, improving network stability.
- Intelligent DFA technology: The dynamic frequency assignment (DFA) algorithm is used to automatically detect adjacent-channel and co-channel interference, and identify any 2.4 GHz redundant radio. Through automatic inter-AP negotiation, the redundant radio is automatically switched to another mode (dual-5G AP models support 2.4G-to-5G switchover) or is disabled to reduce 2.4 GHz co-channel interference and increase the system capacity.
- Intelligent conflict optimization technology: The dynamic enhanced distributed channel access (EDCA) and airtime scheduling algorithms are used to schedule the channel occupation time and service priority of each user. This ensures that each user is assigned relatively equal time for using channel resources and user services are scheduled in an orderly way, improving service processing efficiency and user experience.

Air interface Performance Optimization

- In high-density scenarios where many users access the network, increased number of low-rate STAs consumes more resources on the air interface, reduces the AP capacity, and lowers user experience. Therefore, Huawei APs will check the signal strength of STAs during access and rejects access from weak-signal STAs. At the same time, the APs monitor the rate of online STAs in real time and forcibly disconnect low-rate STAs so that the STAs can reassociate with APs that have stronger signals. The terminal access control technology can increase air interface use efficiency and allow access from more users.

5G-prior Access

- The APs support both 2.4 GHz and 5 GHz frequency bands. The 5G-prior access function enables an AP to steer STAs to the 5 GHz frequency band first, which reduces load and interference on the 2.4 GHz frequency band, improving the user experience.

Wired and Wireless Dual Security Guarantee

To ensure data security, Huawei APs integrate wired and wireless security measures and provide comprehensive security protection.

Terminal Wireless Access Authentication and Encryption

- The APs support WEP、WPA/WPA2-PSK、WPA3-SAE、WPA/WPA2-PPSK、WPA/WPA2/WPA3-802.1X authentication/encryption modes to ensure security of the wireless network. The authentication mechanism is used to authenticate user identities so that only authorized users can access network resources. The encryption mechanism is used to encrypt data transmitted over wireless links to ensure that the data can only be received and parsed by expected users.

AP Wired Access Authentication and Encryption

- The AP access control ensures validity of APs. The CAPWAP link protection and DTLS encryption provide security assurance, improving data transmission security between the AP and the WLAN AC.

Automatic Radio Calibration

Automatic radio calibration allows an AP to collect signal strength and channel parameters of surrounding APs and generate an AP topology according to the collected data. Based on the interference caused by authorized APs, rogue APs, and No Wi-Fi APs and their loads, each AP automatically adjusts its transmit power and working channel to make the network operate at the optimal performance. In this way, network reliability and user experience are improved.

Cloud-based Management

The AP can be managed via cloud, then no need to deploy a WLAN AC and an authentication server. In cloud-based management mode, abundant authentication functions, such as pre-shared key (PSK) authentication, Portal authentication, SMS authentication, and social media authentication, can be implemented. This mode significantly simplifies the networking and reduces the capital expenditure (CAPEX). In addition, multiple advanced functions, such as online cloud-based network planning, cloud-based deployment, cloud-based inspection, and cloud-based O&M, can be implemented through Huawei cloud management platform. In multi-branch deployment scenarios, cloud APs are pre-configured on the cloud management platform

firstly. Then on site, you only need to power on the cloud APs and connect them to switch ports, then scan the QR code to implement AP plug-and-play. Pre-configurations are automatically delivered to devices, greatly shortening the network deployment time. The cloud management platform can monitor the network status, device status, and terminal connection status of all sites of a tenant in a comprehensive and intuitive way to learn the network and service running status in real time.

Basic Specifications

Fat/Fit AP Mode

Item	Description
WLAN features	<p>Compliance with IEEE 802.11ax and compatibility with IEEE 802.11a/b/g/n/ac/ac Wave 2</p> <p>Maximum ratio combining (MRC)</p> <p>Space time block code (STBC)</p> <p>Cyclic Delay Diversity (CDD)/Cyclic Shift Diversity (CSD)</p> <p>Beamforming</p> <p>Multi-user multiple-input multiple-output (MU-MIMO)</p> <p>Orthogonal frequency division multiple access (OFDMA)</p> <p>Compliance with 1024-QAM and compatibility with 256-QAM, 64-QAM, 16-QAM, 8-QAM, quadrature phase shift keying (QPSK), and binary phase shift keying (BPSK)</p> <p>Target wake time (TWT)</p> <p>Low-density parity-check (LDPC)</p> <p>Frame aggregation, including A-MPDU (Tx/Rx) and A-MSDU (Tx/Rx)</p> <p>802.11 dynamic frequency selection (DFS)</p> <p>Short guard interval (GI) in 20 MHz, 40 MHz, 80 MHz and 160 MHz modes</p> <p>Priority mapping and scheduling that are compliant with Wi-Fi multimedia (WMM) to implement priority-based data processing and forwarding. Either automatic or manual rate adjustment mode is supported. (The rate is adjusted automatically by default.)</p> <p>WLAN channel management and channel rate adjustment</p> <p>NOTE</p> <p><i>For detailed management channels, see the Country Codes & Channel Compliances.</i></p> <p>Automatic channel scanning and interference avoidance</p> <p>Service set identifier (SSID) hiding</p> <p>Signal sustain technology (SST)</p> <p>Unscheduled automatic power save delivery (U-APSD)</p> <p>Control and Provisioning of Wireless Access Points (CAPWAP) in Fit AP mode</p> <p>Extended Service Set (ESS) in Fit AP mode</p> <p>Advanced cellular coexistence (ACC), minimizing the impact of interference from cellular networks</p> <p>Multi-user call admission control (CAC)</p> <p>802.11k and 802.11v smart roaming</p> <p>802.11r fast roaming (≤ 50 ms)</p>
Network features	<p>Compliance with IEEE 802.3ab</p> <p>Auto-negotiation of the rate and duplex mode and automatic switchover between the Media Dependent Interface (MDI) and Media Dependent Interface Crossover (MDI-X)</p> <p>Compliance with IEEE 802.1q</p> <p>SSID-based VLAN assignment</p> <p>VLAN trunk on uplink Ethernet ports</p> <p>Management channel of the AP uplink port in tagged and untagged mode</p>

Item	Description
	<p>DHCP client, obtaining IP addresses through DHCP</p> <p>Tunnel data forwarding and direct data forwarding</p> <p>STA isolation in the same VLAN</p> <p>IPv4/IPv6 access control lists (ACLs)</p> <p>Link Layer Discovery Protocol (LLDP)</p> <p>Uninterrupted service forwarding upon CAPWAP channel disconnection in Fit AP mode</p> <p>Unified authentication on the AC in Fit AP mode</p> <p>AC dual-link backup in Fit AP mode</p> <p>Network Address Translation (NAT) in Fat AP mode</p> <p>IPv6 in Fit AP mode</p> <p>Telemetry in Fit AP mode, quickly collecting AP status and application experience parameters</p> <p>IPv6 Source Address Validation Improvements (SAVI)</p> <p>Multicast Domain Name Service (mDNS) gateway protocol</p>
QoS features	<p>Priority mapping and scheduling that are compliant with WMM to implement priority-based data processing and forwarding</p> <p>WMM parameter management for each radio</p> <p>WMM power saving</p> <p>Priority mapping for upstream packets and flow-based mapping for downstream packets</p> <p>Queue mapping and scheduling</p> <p>User-based bandwidth limiting</p> <p>Adaptive bandwidth management (automatic bandwidth adjustment based on the user quantity and radio environment) to improve user experience</p> <p>Airtime scheduling</p> <p>Air interface HQoS scheduling</p>
Security features	<p>Open system authentication</p> <p>WEP authentication/encryption using a 64-bit, 128-bit, 152-bit or 192-bit encryption key</p> <p>WPA2-PSK authentication and encryption (WPA2-Personal)</p> <p>WPA2-802.1X authentication and encryption (WPA2-Enterprise)</p> <p>WPA3 authentication and encryption</p> <p>WPA-WPA2 hybrid authentication</p> <p>WPA2-WPA3 hybrid authentication</p> <p>WPA2-PPSK authentication and encryption</p> <p>WAPI authentication and encryption</p> <p>Wireless intrusion detection system (WIDS) and wireless intrusion prevention system (WIPS), including rogue device detection and containment, attack detection and dynamic blacklist, and STA/AP blacklist and whitelist</p> <p>802.1X authentication, MAC address authentication, and Portal authentication</p> <p>DHCP snooping</p> <p>Dynamic ARP Inspection (DAI)</p> <p>IP Source Guard (IPSG)</p> <p>802.11w Protected Management Frames (PMF)</p> <p>DTLS encryption</p>
Maintenance features	<p>Unified management and maintenance on the AC in Fit AP mode</p> <p>Automatic login and configuration loading, and plug-and-play (PnP) in Fit AP mode</p> <p>Batch upgrade in Fit AP mode</p>

Item	Description
	<p>Telnet</p> <p>STelnet using SSHv2</p> <p>SFTP using SSHv2</p> <p>Web-based AP management through HTTP or HTTPS</p> <p>Real-time configuration monitoring and fast fault locating using the NMS</p> <p>SNMP v1/v2/v3 in Fat AP mode</p> <p>System status alarm</p> <p>Network Time Protocol (NTP) in Fat AP mode</p>

Cloud-based Management Mode

Item	Description
WLAN features	<p>Compliance with IEEE 802.11ax and compatibility with IEEE 802.11a/b/g/n/ac/ac Wave 2</p> <p>Maximum ratio combining (MRC)</p> <p>Space time block code (STBC)</p> <p>Cyclic Delay Diversity (CDD)/Cyclic Shift Diversity (CSD)</p> <p>Beamforming</p> <p>Multi-user multiple-input multiple-output (MU-MIMO)</p> <p>Orthogonal frequency division multiple access (OFDMA)</p> <p>Compliance with 1024-QAM and compatibility with 256-QAM, 64-QAM, 16-QAM, 8-QAM, quadrature phase shift keying (QPSK), and binary phase shift keying (BPSK)</p> <p>Target wake time (TWT)</p> <p>Low-density parity-check (LDPC)</p> <p>Frame aggregation, including A-MPDU (Tx/Rx) and A-MSDU (Tx/Rx)</p> <p>802.11 dynamic frequency selection (DFS)</p> <p>Short guard interval (GI) in 20 MHz, 40 MHz, 80 MHz and 160MHz modes</p> <p>Priority mapping and scheduling that are compliant with Wi-Fi multimedia (WMM) to implement priority-based data processing and forwarding. Either automatic or manual rate adjustment mode is supported. (The rate is adjusted automatically by default.)</p> <p>WLAN channel management and channel rate adjustment</p> <p>NOTE</p> <p><i>For detailed management channels, see the Country Codes & Channel Compliances.</i></p> <p>Automatic channel scanning and interference avoidance</p> <p>Service set identifier (SSID) hiding</p> <p>Signal sustain technology (SST)</p> <p>Unscheduled automatic power save delivery (U-APSD)</p>
Network features	<p>Compliance with IEEE 802.3ab</p> <p>Auto-negotiation of the rate and duplex mode and automatic switchover between the Media Dependent Interface (MDI) and Media Dependent Interface Crossover (MDI-X)</p> <p>Compliance with IEEE 802.1q</p> <p>SSID-based VLAN assignment</p> <p>DHCP client, obtaining IP addresses through DHCP</p> <p>STA isolation in the same VLAN</p> <p>Access control lists (ACLs)</p> <p>Unified authentication on the Cloud-based management platform</p> <p>Network Address Translation (NAT)</p>

Item	Description
	Telemetry to quickly collect the AP status and application experience parameters
QoS features	<p>Priority mapping and scheduling that are compliant with WMM to implement priority-based data processing and forwarding</p> <p>WMM parameter management for each radio</p> <p>WMM power saving</p> <p>Priority mapping for upstream packets and flow-based mapping for downstream packets</p> <p>Queue mapping and scheduling</p> <p>User-based bandwidth limiting</p> <p>Airtime scheduling</p> <p>Air interface HQoS scheduling</p>
Security features	<p>Open system authentication</p> <p>WEP authentication/encryption using a 64-bit, 128-bit, 152-bit or 192-bit encryption key</p> <p>WPA2-PSK authentication and encryption (WPA2-Personal)</p> <p>WPA2-802.1X authentication and encryption (WPA2-Enterprise)</p> <p>WPA3 authentication and encryption</p> <p>WPA-WPA2 hybrid authentication</p> <p>WPA2-WPA3 hybrid authentication</p> <p>802.1X authentication, MAC address authentication, and Portal authentication</p> <p>DHCP snooping</p> <p>Dynamic ARP Inspection (DAI)</p> <p>IP Source Guard (IPSG)</p>
Maintenance features	<p>Unified management and maintenance on the Cloud management platform</p> <p>Automatic login and configuration loading, and plug-and-play (PnP)</p> <p>Batch upgrade</p> <p>Telnet</p> <p>STelnet using SSHv2</p> <p>SFTP using SSHv2</p> <p>Web-based local AP management through HTTP or HTTPS</p> <p>Real-time configuration monitoring and fast fault locating using the NMS</p> <p>System status alarm</p> <p>Network Time Protocol (NTP)</p>

Technical Specifications

Item		Description
Technical specifications	Dimensions (Diameter x Height)	Φ180 mm x 35 mm
	Weight	0.45 kg
	Interface type	1 x 10M/100M/1GE (RJ45) NOTE . The GE electrical port supports the PoE input.
	LED indicator	Indicates the power-on, startup, running, alarm, and fault states of

Item		Description
		the system.
Power specifications	Power input	<ul style="list-style-type: none"> PoE power supply: in compliance with 802.3af
	Maximum power consumption	8.8 W NOTE <i>The actual maximum power consumption depends on local laws and regulations.</i>
Environmental specifications	Operating temperature	0°C to +40°C
	Storage temperature	-40°C to +70°C
	Operating humidity	5% to 95% (non-condensing)
	Altitude	-60 m to +5000 m
	Atmospheric pressure	53 kPa to 106 kPa
Radio specifications	Antenna type	Built-in smart antennas
	Antenna gain	2.4 GHz: 4 dBi 5 GHz: 5 dBi NOTE <ul style="list-style-type: none"> The gains above are the single-antenna peak gains. The equivalent antenna gain after all 2.4 GHz or 5 GHz antennas are combined is 2 dBi in 2.4 GHz or 3 dBi in 5 GHz.
	Maximum number of SSIDs for each radio	8
	Maximum transmit power	2.4 GHz: 23 dBm (combined power) 5 GHz: 23 dBm (combined power) NOTE <i>The actual transmit power depends on local laws and regulations.</i>
	Power increment	1 dBm
	Maximum number of non-overlapping channels	2.4 GHz (2.412 GHz to 2.472 GHz) <ul style="list-style-type: none"> 802.11b/g <ul style="list-style-type: none"> 20 MHz: 3 802.11n <ul style="list-style-type: none"> 20 MHz: 3 40 MHz: 1 802.11ax <ul style="list-style-type: none"> 20 MHz: 3 40 MHz: 1 5 GHz (5.18 GHz to 5.825 GHz) <ul style="list-style-type: none"> 802.11a <ul style="list-style-type: none"> 20 MHz: 13 802.11n <ul style="list-style-type: none"> 20 MHz: 13 40 MHz: 6 802.11ac

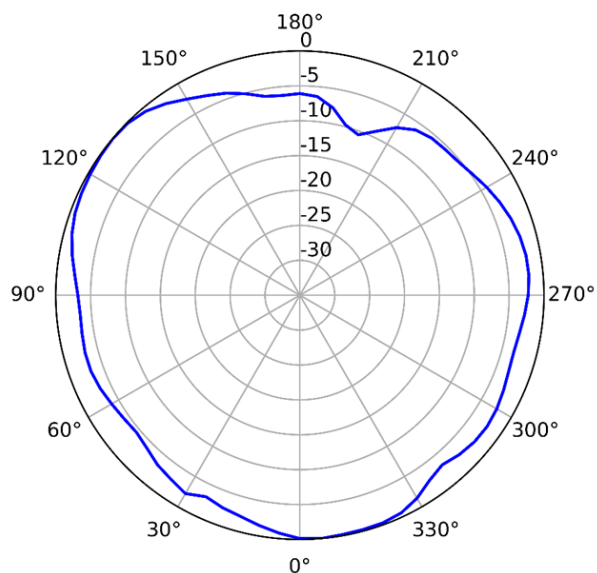
Item		Description
		<ul style="list-style-type: none"> - 20 MHz: 13 - 40 MHz: 6 - 80 MHz: 3 - 160 MHz: 1 • 802.11ax <ul style="list-style-type: none"> - 20 MHz: 13 - 40 MHz: 6 - 80 MHz: 3 - 160 MHz: 1 <p>NOTE</p> <p><i>The table uses the number of non-overlapping channels supported by China as an example. The number of non-overlapping channels varies in different countries. For details, see the Country Codes & Channels Compliance.</i></p>

Standards Compliance

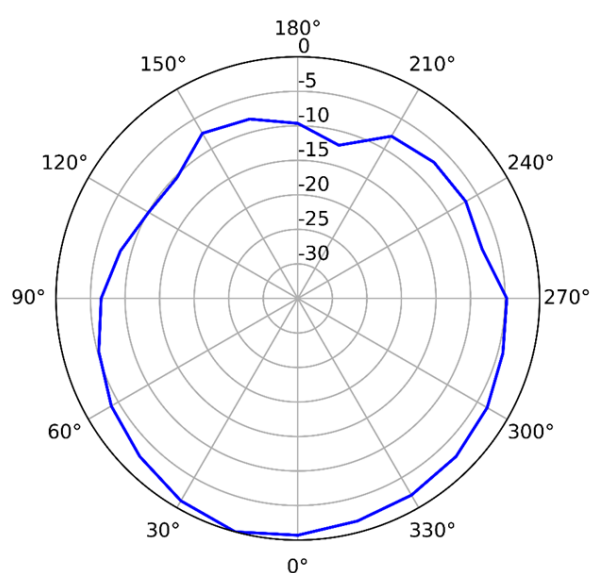
Item	Description		
Safety standards	<ul style="list-style-type: none">• UL 60950-1• EN 60950-1• IEC 60950-1	<ul style="list-style-type: none">• UL 62368-1• EN 62368-1• IEC 62368-1	<ul style="list-style-type: none">• GB 4943.1• CAN/CSA 22.2 No.60950-1
Radio standards	<ul style="list-style-type: none">• ETSI EN 300 328	<ul style="list-style-type: none">• ETSI EN 301 893	<ul style="list-style-type: none">• AS/NZS 4268
EMC standards	<ul style="list-style-type: none">• EN 301 489-1• EN 301 489-17• EN 60601-1-2• EN 55024• EN 55032• EN 55035	<ul style="list-style-type: none">• GB 9254• GB 17625.1• GB 17625.2• AS/NZS CISPR32• CISPR 24• CISPR 32• CISPR 35	<ul style="list-style-type: none">• IEC/EN61000-4-2• IEC/EN 61000-4-3• IEC/EN 61000-4-4• IEC/EN 61000-4-5• IEC/EN61000-4-6• ICES-003
IEEE standards	<ul style="list-style-type: none">• IEEE 802.11a/b/g• IEEE 802.11n• IEEE 802.11ac• IEEE 802.11ax	<ul style="list-style-type: none">• IEEE 802.11h• IEEE 802.11d• IEEE 802.11e• IEEE 802.11k	<ul style="list-style-type: none">• IEEE 802.11v• IEEE 802.11w• IEEE 802.11r
Security standards	<ul style="list-style-type: none">• 802.11i, Wi-Fi Protected Access (WPA), WPA2, WPA2-Enterprise, WPA2-PSK, WPA3, WAPI• 802.1X• Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP), WEP, Open• EAP Type(s)		
EMF	<ul style="list-style-type: none">• EN 62311	<ul style="list-style-type: none">• EN 50385	
RoHS	<ul style="list-style-type: none">• Directive 2002/95/EC & 2011/65/EU	<ul style="list-style-type: none">• (EU)2015/863	
Reach	<ul style="list-style-type: none">• Regulation 1907/2006/EC		

Item	Description
WEEE	<ul style="list-style-type: none"> Directive 2002/96/EC & 2012/19/EU

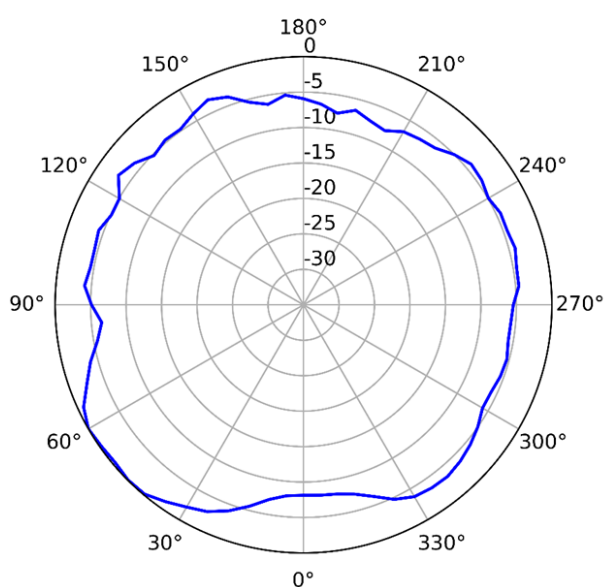
Antennas Pattern



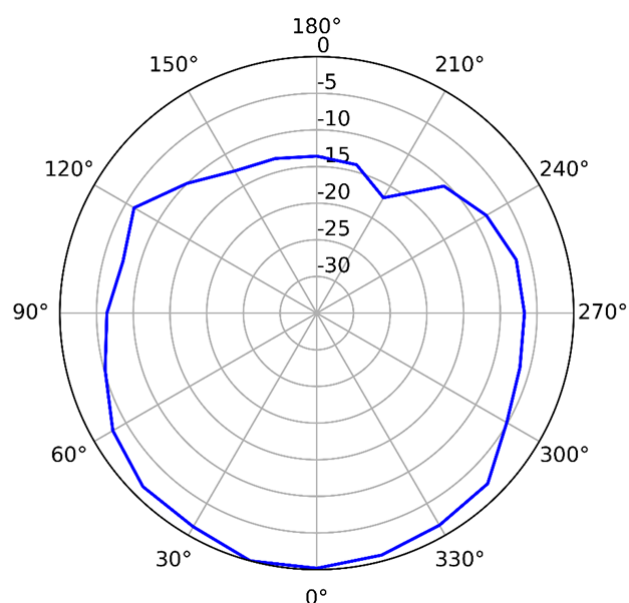
2.4G (Horizontal)



2.4G (Vertical)



5G (Horizontal)



5G (Vertical)

More Information

For more information about Huawei WLAN products, visit <http://www.huawei.com>.

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